IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

GREEN MOUNTAIN GLASS, LLC AND CULCHROME, LLC, Plaintiffs, v. SAINT-GOBAIN CONTAINERS, INC. d/b/a VERALLIA NORTH AMERICA, Defendant.	Civil Action No. 1:14-cv-00392-GMS JURY TRIAL DEMANDED

DEFENDANT'S OPENING CLAIM CONSTRUCTION BRIEF

I. INTRODUCTION

Defendant and Counterclaimant Saint-Gobain Containers, Inc. (formerly doing business as Verallia North America and now known as Ardagh Glass Inc.) ("Defendant" or "Ardagh"), is one of the leading glass container manufacturers in the United States. Ardagh, a Delaware corporation headquartered in Muncie, Indiana, operates a state-of-the-art glass equipment and technology center along with 15 glass plants located across the country. Employing over five thousand employees, Ardagh designs, develops and produces endlessly recyclable glass bottles and jars for the wine, beer, beverage, spirits and food container markets, producing 10 billion bottles and jars each year.

Plaintiffs Green Mountain Glass, LLC, and CulChrome LLC, and their predecessors-in-interest,[1] are non-practicing entities that have attempted for over sixteen years *without success* to license the Patents-in-Suit (U.S. Patent Nos. 5,718,737 ("the Mosch Patent") and 6,230,521 ("the

[1] Plaintiffs' predecessors-in-interest include International Cullet Exchange, Inc., and G.R. Technologies.

Lehman Patent")) to U.S. glass container manufacturers. Ardagh has repeatedly and expressly denied that it infringes the claims of the Patents-in-Suit and rejected any overtures by Plaintiffs to take a license. In this action, Plaintiffs have now sued Ardagh for alleged infringement; Ardagh has denied liability and counterclaimed for declarations of non-infringement and invalidity.

Claim construction is required for the Patents-in-Suit because of the extensive prosecution history related to both wherein the inventors were forced to repeatedly and expressly surrender the scope of the claim terms. In addition, construction is required because the inventors provided special definitions to certain claim terms, so the inventors' lexicography, respectively, must govern their interpretation. As such, Ardagh's constructions are aligned with what the inventors actually invented and intended to envelop with the claims. On the other hand, Plaintiffs' proposed construction would result in brand new patents by wiping away the prosecution history associated with the claims and by reading out claim limitations through their proposed alternative constructions.

In the Joint Claim Construction Chart, filed January 21, 2015, the parties identified disputed claim terms for construction by the Court. Ardagh submits this brief in support of its proposed constructions for those terms and provides the correct legal framework for the analysis provided below.

II. LAW OF CLAIM CONSTRUCTION

Courts construe claims as a matter of law. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996). Claim construction involves considering "the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning the relevant scientific principles, the meaning of technical terms, and the state of the art." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005). "The construction of claims is simply a way

of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims." *Embrex, Inc. v. Serv. Eng'g Corp.*, 216 F.3d 1343, 1347 (Fed. Cir. 2000). "We indulge in a 'heavy presumption' that claim terms carry their full ordinary and customary meaning unless the patentee unequivocally imparted a novel meaning to those terms or expressly relinquished claim scope during prosecution." *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003). "The inquiry into how a person of ordinary skill in the art understands the claim term provides an objective baseline from which to begin claim interpretation." *Phillips* at 1313.

While it is a "bedrock principle" of patent law that "the claims of a patent define the invention to which the patentee is entitled to the right to exclude," *Philips* at 1312, claims "must be read in view of the specification, of which they are a part." *Id*. at 1315. In fact, there is a long pedigree of Supreme Court decisions that teach that the specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Id*. "Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Id*. at 1316. Federal Circuit precedent recognizes that "the specification may reveal a special definition given to a claim term by the patentee" and that "the inventor's lexicography governs." *Id.* Moreover, "the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor. In that instance . . ., the inventor has dictated the correct claim scope, and the inventor's invention, as expressed in the specification, is regarded as dispositive." *Id.* Accordingly, it is entirely appropriate for a court, when conducting claim

construction, "to rely heavily on the written description for guidance as to the meaning of claims." *Id*. at 1317.

Claim construction also requires consideration of the prosecution history. "Designated as part of the 'intrinsic evidence,' [the prosecution history] consists of the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent." *Id.* The prosecution history informs "the meaning of claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim narrower than it would otherwise be." *Id.* Claims that have been narrowed in order to obtain the issuance of a patent by distinguishing prior art cannot be sustained to cover that which was previously by limitation eliminated from the patent. *Omega Eng'g, Inc.*, 334 F.3d at 1323 ("The doctrine of prosecution disclaimer is well established in Supreme Court precedent, precluding patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution."); *see also Vitronics Corp. v. Conceptronic, Inc.,* 90 F.3d 1576, 1582-83 (Fed. Cir. 1996) ("The purpose of consulting the prosecution history in construing a claim is to 'exclude' any interpretation that was disclaimed during prosecution."). Under this legal framework, Ardagh will provide its proposed claim constructions for the Patents-in-Suit.

III. ARDAGH'S PROPOSED CONSTRUCTIONS

A. U.S. Patent No. 5,718,737 ("the Mosch Patent") [Jt. App'x Tab 1]

The Mosch Patent, entitled "Method of Recycling Mixed Colored Cullet into Amber, Green, or Flint Glass," was filed by the alleged sole inventor Duane A. Mosch on July 18, 1996. The Mosch Patent is a continuation of, and claims priority to, abandoned U.S. Patent Application 08/399,299, entitled "Method of Recycling Mixed Colored Cullet into Amber Colored Cullet," filed on March 3, 1995, by co-inventors Frank G. Pringle, Kevin J. Coffey, and Duane A. Mosch

("the Pringle Application"). [Jt. App'x Tab 3] The Mosch Patent includes a total of 26 claims, three of which are independent – Claims 1, 9, and 18. The Mosch Patent relates, generally, to the field of glass recycling, and, more particularly, to a method of creating recycled glass products of a certain color using unsorted mixed color glass cullet having glass of at least two colors, and both a decolorizing agent and a colorizing agent.

There are two claim terms in dispute: (1) "unsorted mixed color glass cullet" (and "[said/the] mixed color (glass) cullet"); and (2) "[glass of] at least two different colors."

1. *unsorted mixed color glass cullet* (Claims 1, 9, and 18) (along with *said mixed color cullet* and *the mixed color glass cullet*) (Claims 1, 2, 9, 11, 18, and 20)

***See, e.g.*, Claim 1**
A method of creating recycled glass products, comprising the steps of: obtaining **unsorted mixed color glass cullet** having glass of at least two different colors; adding to **said mixed color glass cullet** at least one of a decolorizing agent which selectively decolorizes at least one of the colors of said **unsorted mixed color glass cullet** and a colorizing agent which enhances a remaining color of said **unsorted mixed color glass cullet**; and melting **the mixed color glass cullet** and any agent added in said adding step to a molten state; creating a recycled glass product of said remaining color from the selectively colorized/decolorized molten mixed color glass cullet.

Ardagh's Proposed Construction	**Plaintiffs' Proposed Construction**
"post-consumer broken pieces of glass of mixed colors that have never been sorted by color"	No construction needed; in the alternative, "broken pieces of glass of mixed colors"

Ardagh proposes that "unsorted mixed color cullet" means "post-consumer broken pieces of glass of mixed colors that have never been sorted by color" is the construction that best conforms to the intrinsic record. The patent specification defines "cullet" as including "[b]ulk recycled post-consumer glass suitable for melting into recycled glass articles" (Mosch Patent [Jt. App'x Tab 1] at 1:32-34) and "[o]ther waste glass, e.g., off-quality material and scrap from the manufacture of glass products" (*id*. at 1:40-42.) The specification defines "mixed color glass

cullet" as "broken pieces of glass of mixed colors and types" (*id*. at 1:14-15) that "is generally reclaimed, post-consumer glass, ..." (*id*. at 4:11-13.) The patent specification distinguishes "mixed color glass cullet" from cullet that has been previously sorted by color. *See id*. at 1:65-67 ("A by-product of glass recycling, even when an attempt is made to sort the glass by color, is a quantity of mixed colored pieces."); *id*. at 2:10-13 ("It would be desirable to develop a process for re-using mixed colored glass, wherein mixed colored cullet can be used like color sorted cullet, to make new and useful glass products."); *see, e.g., id*. at Abstract, 1:44-67, 2:1-18, 4:10-23, 5:12-14, 5:17-19, Claims 1, 9, and 18.

Any doubt that "mixed color glass cullet" excludes cullet that has been sorted is resolved by the prosecution history. As noted, the Mosch Patent is a continuation of the Pringle Application, which forms a part of the intrinsic record. On March 12, 1996, the Examiner rejected all claims in the Pringle Application stating:

> It would have been obvious to one having ordinary skill in the art at the time the invention was made to use *mixed colored cullet* since it was known in the art that cullet can be used in glass manufacturing as shown by applicants' admission in the specification that *mixed color cullet* is used in the glassmaking art (page 1, lines 14-17 and page 2, lines 21-23).

(Pringle Application, U.S. Patent Application 08/399,299, Prosecution History, Office Action Summary at 3 (Mar. 12, 1996) [Jt. App'x Tab 4 at A0090].)

On September 22, 1996, in the Preliminary Amendment that was filed with the Mosch application, and in response to the Examiner's rejection in the Pringle Application, the title, abstract, specification and claims of the Mosch patent were "amended to clarify that the invention relates to a method of creating recycled glass products of a particular color from unsorted mixed color glass cullet, *which has heretofore simply been discarded in landfills, used in paving materials, and the like.*" (Mosch Patent, Prosecution History, Prelim. Amend., at 14-15 (Sep. 22, 1996) [Jt. App'x Tab 5 at A0108]) (emphasis added), at 7-14 [Jt. App'x Tab 5 at A100-

107] (cancelling the Pringle Application claims and adding new claims to include "unsorted mixed color glass cullet"). Further, Mosch admitted that "glass *is* conventionally *sorted* before being used in the recycling process," and added that "nothing in the background of the [Pringle Application] suggests that it would have been known to use the ***unsorted*** *mixed color glass cullet*" as in the amended claims:

> Thus, **while sorted single color glass cullet has indeed been recycled into new glass products, the *unsorted* mixed color glass cullet has not, to Applicant's knowledge, been recycled into new glass products of a particular color**. Applicant's "admission" is thus nothing more than a recognition that glass is conventionally sorted before being used in glass recycling; nothing in the background of the application suggests that it would have been known to use the *unsorted mixed color glass cullet* by-product of such conventional techniques to make recycled glass products of a particular color."

(*Id*. at 17-18 [A0110-11] (emphasis added), 15 [A108] ("As set forth by way of example in new independent claim 19, ***the invention is characterized by adding a previously discarded starting material***, namely, unsorted mixed color glass cullet, and producing a recycled glass product, therefrom") (emphasis added).)

Plaintiffs' proposed construction eliminates "post-consumer" from the definition. This omission fails to account for the prosecution history. In the prosecution history, Mosch stated that the cullet being used is "a previously discarded starting material" that "which has heretofore simply been discarded in landfills, used in paving materials, and the like." (*Id*. at 15 [A108].) Only cullet from post-consumer glass fits this description.

Plaintiffs' proposed construction also literally reads out "unsorted" and, thus, fundamentally leaves out the heart of the entire invention which is verboten under patent law. Plaintiffs' proposed construction, which eliminates "never been sorted" from the definition, fails to account for the prosecution history and would improperly permit an interpretation that *unsorted mixed color glass cullet* includes *color sorted cullet* that is mixed together after sorting

at some point in the glass making process. This is an improper construction in light of the prosecution history. Mosch specifically used the term *unsorted* mixed color glass cullet, not the term *sorted* mixed color glass cullet. Sorted mixed color glass cullet can only be color sorted cullet that has been mixed together after sorting. Therefore, *unsorted mixed color glass cullet* must be cullet that has never been sorted by color.[2]

2. "at least two different colors" (Claims 1, 9, and 18)

***See, e.g.*, Claim 1 (excerpt)**
A method of creating recycled glass products, comprising the steps of: obtaining unsorted mixed color glass cullet having glass of **at least two different colors**; [. . .].

Ardagh's Proposed Construction	**Plaintiffs' Proposed Construction**
"[glass of] at least two different colors (not including flint)"	No construction needed; in the alternative, "more than one color"

In no uncertain terms, and on multiple occasions in the intrinsic record, the Mosch Patent defines flint as a colorless glass references. (Mosch Patent [Jt. App'x Tab 1] at Abstract ("flint (colorless) glasses"); 1:36-37 ("Recycled containers comprise different colors, especially amber and green and also colorless or flint glass"); 2:4 ("flint (colorless)"); 2:18-22; 2:55; 3:32 ("flint (colorless) glass); 4:14 ("green, amber, and flint (colorless) glasses"); 4:15-17 ("green, amber, and flint (colorless) glasses"); 6:16 ("flint (colorless)"); 6:29 ("flint (colorless)"); 6:43 ("flint (colorless)"); 7:12("flint (colorless)").) Where the claims call for unsorted mixed color glass cullet having *glass of at least two different colors*, such glass, by definition of the inventor, does not include flint. Accordingly, Ardagh's construction for this phrase (which appears in all the Independent Claims), is "[glass of] at least two different colors (not including flint)." Plaintiffs'

[2] Ardagh also proposes that the claim terms "said mixed color glass cullet" and "the mixed color glass cullet" should be afforded the same construction as "unsorted mixed color glass cullet," because they are used only as a short-hand for "unsorted mixed color glass cullet" and have no separate antecedent basis. *See, e.g.*, Claims 1, 9, and 18.

proposed construction fails to account for the inventor's specific definition of flint as *colorless* and is, therefore, an improper attempt to broaden the scope of the claims.

B. U.S. Patent No. 6,230,521 ("the Lehman Patent") [Jt. App'x Tab 2]

The Lehman Patent is entitled "Method of Recycling Batches of Mixed Color Cullet into Amber, Green, or Flint Glass with Selected Properties," and was filed by Richard L. Lehman on April 9, 1998. The Lehman Patent includes a total of 31 claims, four of which are independent – Claims 1, 26, 28, and 30. The Lehman Patent purports "to expand upon the technique described in U.S. Pat. No. 5,718,737 [the Mosch Patent] by automating the recycling process and adapting it to conventional commercial glass production processes by specifying the amount of raw materials needed to create glass products with desired properties using different batches of mixed colored cullet." (Lehman Patent [Jt. App'x Tab 2] at 3:20-23, 3:44-49.)

The following claim terms from the Lehman Patent are in dispute: (1) "mixed color glass cullet" (or "mixed color(ed) cullet"); (2) "finished glass product" (and "recycled glass product"); (3) "glass coloring oxide agent"; (4) Step 5 of the independent claims; (5) Step 6 of the independent claims; and, (6) Step 7 of the independent claims.

***See, e.g.*, Claim 1**
"A method of creating recycled glass products of a particular color from raw materials including mixed color glass cullet, said mixed color glass cullet including at least two of green glass, amber glass, and flint glass, comprising the steps of: [Step 1] selecting virgin glass raw materials and determining percentages of selected components of said virgin glass raw materials; [Step 2] determining percentages of at least said selected components of said mixed color glass cullet; [Step 3] determining how much of said mixed color glass cullet is to be melted as a fraction of a recycled finished glass from which said recycled glass products are to be created; [Step 4] specifying the percentage composition of said at least two of said amber, green, and flint glass in said mixed color glass cullet;

[Step 5] specifying, prior to melting of said mixed color glass cullet, transmission properties of said recycled glass products of said particular color; [Step 6] calculating using said percentages and said percentage composition the desired glass coloring oxide agent levels and key glass color indicator parameters of glass of said particular color with said specified transmission properties; [Step 7] calculating a composition of said recycled finished glass, said composition including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust final glass coloring oxide agent levels to said desired glass coloring oxide agent levels for glass of said particular color with said specified transmission properties, whereby when said particular color is green, color contribution of said amber glass is adjusted, when said particular color is amber, color contribution of said green glass is adjusted, and when said particular color is flint, color contribution of said green and amber glass is adjusted; [Step 8] and creating recycled glass products from said calculated composition.

1. "mixed color glass cullet" (or "mixed color(ed) cullet") (Claims 1, 2, 7, 9, 17, 26, 27, 28, 30, 31)

Ardagh's Proposed Construction	**Plaintiffs' Proposed Construction**
"post-consumer broken pieces of glass of mixed colors that have never been sorted by color"	No construction needed; in the alternative, "broken pieces of glass of mixed colors"

Although not a continuation, the Lehman Patent claims to "expand on the technique" of the Mosch Patent and borrows heavily from the Mosch Patent, copying significant portions of the Mosch Patent specification. In the Lehman Patent, the inventor explains that "[i]n co-assigned related U.S. Pat. No. 5,718,737 [the Mosch Patent], a process was described for re-using ***mixed color glass cullet*** to make new and useful glass products. [. . .] [I]t is desired to expand upon the technique described in U.S. Pat. No. 5,718,737 . . . using different batches of ***mixed colored cullet***." (Lehman Patent [Jt. App'x Tab 2] at 3:20-23, 3:44-49.) In the prosecution history, Lehman affirmed that "the present invention improves upon the technique disclosed by Mosch . . . [and] enables a wide range of formulations with much higher ***mixed***

color cullet levels . . . ." (Lehman Patent, Prosecution History, Response to First Office Action at 4-5 [Jt. App'x Tab 9 at A0204-05] (June 23, 1999).) In the specification of the Lehman Patent, the term is used in the same way that it is used in the Mosch Patent. Specifically, the term is used throughout the "Description of the Prior Art" in the Lehman Patent which is copied verbatim from the "Background of the Invention" in the Mosch Patent, and the term is also used throughout the "Detailed Description of Presently Preferred Embodiments" in the Lehman Patent which liberally borrows from the "Detailed Description of the Preferred Embodiments of the Invention" from the Mosch Patent.[3]

Significantly, the Lehman Patent provides no information about the meaning of the term "mixed color glass cullet" beyond that provided in the Mosch Patent. Accordingly, the term "mixed color glass cullet" should be given the same meaning in both patents. As previously discussed, the term *mixed color glass cullet* was clarified during the prosecution of the Mosch Patent when the applicant submitted amendments "to clarify that the invention relates to a method of creating recycled glass products of a particular color from unsorted mixed color glass cullet, *which has heretofore simply been discarded in landfills, used in paving materials, and the like*." Plaintiffs' proposed construction, again, attempts to distance the Lehman Patent from the Mosch Patent (which is not what the inventor intended or expressly affirmed) in order to obtain fourteen years later from this Court what it did not receive during prosecution. Accordingly, and for all of the reasons previously discussed above regarding the Mosch Patent, the proper construction of mixed color glass cullet in the Lehman Patent should also be "post-consumer broken pieces of glass of mixed colors that have never been sorted by color."

[3] *Compare* Lehman Pat. at 1:25-3:19 *with* Mosch Pat. at 1:27-3:28; Lehman Pat. at 7:66-11:23 *with* Mosch Pat. at 4:12-6:67.

2. "finished glass product" (to be construed as "recycled glass product") (Claims 1, 3, 5, 7, 9, 11, 15, 26, 28, 30)

***See, e.g.,* Claim 3**
A method as in claim 1, wherein said particular color is amber, and said step of specifying transmission properties of said **recycled glass products** comprises the steps of specifying a thickness of a **finished glass product** made from said calculated composition and specifying at least two of: an optical transmission of said **finished glass product** at 550 nm (T_{550}), and optical transmission of said **finished glass product** at 650 nm (T_{650}), and a redness ratio (T_{650}/T_{550}) of said **finished glass product**.

Ardagh's Proposed Construction	**Plaintiffs' Proposed Construction**
"recycled glass product"	No construction needed; in the alternative, "a finished product of glass"

Recycled glass product is the product resulting from the claimed process, *e.g.*, a glass bottle. The Lehman Patent interchangeably uses the term *finished glass product* and *recycled glass product*, oftentimes within the same claim without providing any distinction.[4] Since the terms appear to be used interchangeably, Ardagh proposes that *finished glass product* be construed to mean *recycled glass product*.

Plaintiffs' proposed construction provides no explanation as to how a *finished glass product* differs from a *recycled glass product* in the context of the Lehman Patent claims. In the absence of a reason for a difference, they should be construed to mean the same thing.

3. "glass coloring oxide agent" (Claims 1, 26, 28, 30)

[4] *See, e.g.,* Lehman Pat. at Claim 7 ("said step of specifying transmission properties of said *recycled glass products* comprises the step of determining the best possible neutral density transmission for a *finished glass product* for the specified amount of mixed color glass cullet in said *finished glass product*"); 5:52-55 *compare with* 5:57-62 ("The scope of the invention also includes the *finished glass products* made from the combined three mix and virgin glass composition calculated using the techniques of the invention. Preferably, the *finished glass product* is a glass bottle, such as an amber or green beer bottle. The scope of the invention also includes . . . the process of creating *recycled glass products* of a particular color from mixed color glass cutlet[sic] having glass of at least two different colors.").

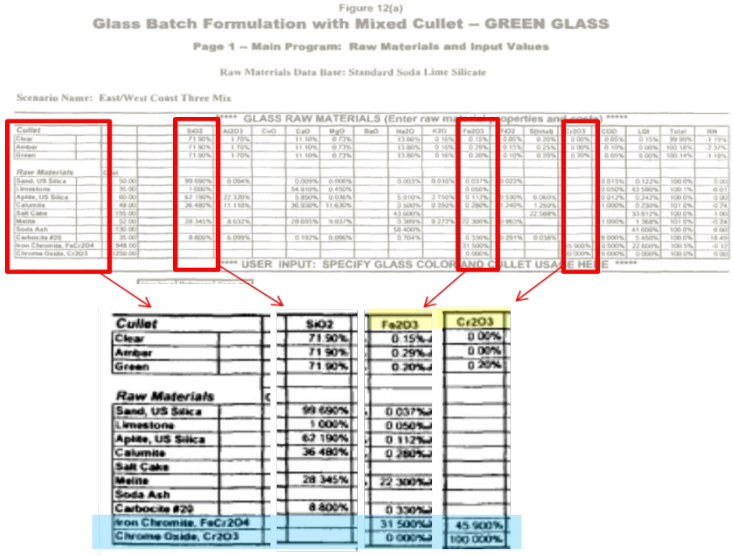
Ardagh's Proposed Construction	**Plaintiffs' Proposed Construction**
"a selected virgin glass raw material included for the sole purpose of providing an oxide that affects the color of the recycled glass products"	No construction needed; in the alternative, "an agent that affects the color of glass"

Ardagh proposes that a "glass coloring oxide agent" is "a selected virgin glass raw material included for the sole purpose of providing an oxide that affects the color of the recycled glass products."

The Lehman Patent refers to both "glass coloring oxides" and "glass coloring oxide agents." (*See, e.g.,* Lehman Patent [Jt. App'x Tab 2] at Abstract; 1:19-20; 3:65; 4:32; 4:38; 5:11; 5:40; 6:10; 6:19; 12:33; 13:1; 13:63; 14:2-3; 15:47-50; 15:66; 16:2-3; 16:44; 18:7.) Independent claims 1, 26, 28, and 30 make no reference to "glass coloring oxides"; they only include reference to "glass coloring oxide agents." Only dependent claim 12 refers to a "glass coloring oxide." These are two very different things and the difference is critical to understanding the claims and the alleged invention. Accordingly, Ardagh's construction seeks to clarify the distinction between the two terms.

The distinction between a "glass coloring oxide" and a "glass coloring oxide agent" is that the former is a component of an ingredient in the glass batch, and the latter is an ingredient in the glass batch. This is best exemplified in Figs. 12(a) and 12(b) of the Lehman Patent. In the left-most column, the ingredients of the glass batch (cullet and other raw materials) are listed. To the right, each ingredient is broken down into its component parts, including structural oxides (such as SiO_2), and coloring oxides (such as iron oxide (Fe_2O_3) and chrome oxide (Cr_2O_3)). (*Id.* at Figs. 12(a); 12(b); 1:20; 1:65; 5:12;16:24-28; 26:1-4.)

As shown in Figs. 12(a) (see caption below) and 12(b), glass coloring oxides are provided as components of a number of ingredients. For example, the coloring oxide Fe_2O_3 (highlighted in yellow) is provided by each of the cullet, sand, limestone, Aplite, Calumite, Melite, and iron chromite ($Fe_2Cr_2O_4$) (highlighted in blue). However, each of these glass batch ingredients, except the iron chromite ($Fe_2Cr_2O_4$), provides a component other than a glass coloring oxide. For example, each of sand, limestone, Aplite, Calumite, and Melite provides amounts of the component SiO_2, a structural oxide, in addition to Fe_2O_3, a coloring oxide. In other words, while these other ingredients provide some glass coloring oxides, it is not their sole purpose. Iron chromite ($Fe_2Cr_2O_4$) solely provides the component parts of Fe_2O_3 and Cr_2O_3, both glass coloring oxides. Thus, iron chromite ($Fe_2Cr_2O_4$) is a glass coloring oxide agent because it is a raw material included solely for the purpose of providing oxides that affect the color of the recycled glass product.



Similarly, again with reference to Figs. 12(a) and 12(b), the coloring oxide "Cr_2O_3" is provided by cullet, iron chromite, and chrome oxide (Cr_2O_3) (highlighted in blue), which are identified in the list of "Raw Materials" (ingredients) in the left-most column of Fig. 12(a). The ingredient chrome oxide (Cr_2O_3) only provides Cr_2O_3 as a component (highlighted in yellow).

As such, chrome oxide (Cr_2O_3) can be both a glass coloring oxide agent (an ingredient) and a glass coloring oxide (a component). Thus, when referred to as a component, chrome oxide (Cr_2O_3) is a *glass coloring oxide*; and, when chrome oxide (Cr_2O_3) is referred to as an ingredient, it is a *glass coloring oxide agent*. In sum, when using the term "glass coloring oxide," the reference is to a component part, usually with reference to the contribution of a particular ingredient to that component. In contrast, using the term "glass coloring oxide agent" refers to an ingredient, which is then broken down into its component parts.

Plaintiffs propose that "glass coloring oxide agent" needs no construction or alternatively means "an agent that affects the color of glass." However, Plaintiffs' proposed construction fails to distinguish "glass coloring oxide" from "glass coloring oxide agent," and also reads out the word "agent," thereby impermissibly broadening the claim.

4. "specifying prior to melting of said mixed color glass cullet, transmission properties of said recycled glass products of said particular color" (hereinafter, "Step 5") (Claims 1, 26, 28, and 30)

Ardagh's Proposed Construction	**Plaintiffs' Proposed Construction**
"specifying, prior to melting of said mixed color glass cullet, transmission properties of said recycled glass products of said particular color **sufficient to define said particular color**"	No construction needed; in the alternative: "identifying the intended transmission properties"

Ardagh's definition seeks to clarify that the specified transmission properties must be sufficient to define the desired color and transmission properties of the finished glass product. Lehman is quite clear that for each color of glass to be made, certain combinations of information are required. (Lehman Patent [Jt. App'x Tab 2] at Fig. 1; 12:39-45; 12:60-65; 13:3-12.) In the case of amber and green glass, it is clear from the specification that any single transmission property is not sufficient to define the desired properties; thus, it is not enough to

merely specify any transmission properties, but rather, it is required to specify sufficient transmission properties to define the desired color.[5]

This is important to Lehman's process because the first calculating step (calculation of the coloring oxide agent levels and key glass color indicator parameters) relates to "glass of said particular color with said specified transmission properties." *See id.* at 18:12-14 ("6. calculating glass coloring agent levels from specified transmission properties using known relationships between oxide percentages and extinction coefficients."). Those results are then relied upon in the second calculating step. Ardagh's construction "specifying, prior to melting of said mixed color glass cullet, transmission properties of said recycled glass products of said particular color sufficient to define said particular color" clarifies that the specified transmission properties must be sufficient to define the desired color.

Plaintiffs again indicate no construction is needed while alternatively proffering that the phrase means simply "identifying the intended transmission properties." As noted above, merely identifying intended transmission properties is not enough because, for each color, sufficient information must be given such that the desired color can be defined and therefore calculated from the specified information.

Moreover, Plaintiffs' proposed definition broadens the scope of the claim term as a whole and reads out the phrase "prior to melting of said mixed color glass cullet" which was added by amendment during prosecution. "[T]he process of the invention allows the color and

[5] In the case of amber glass, "the user should define the thickness of the transmission specimen (3.18mm is the default) and specify the optical transmission at 550 nm (T_{550}) and the optical transmission at 650 nm (T650) and/or the redness ratio, i.e., T650/T550, in the finished glass product . . . ." (Lehman Patent [Jt. App'x Tab 2] at 12:40-45.) In the case of green glass, "the user should define the thickness of the transmission specimen (3.18mm) and the amount of chromium (as Cr_2O_3) and iron (as Fe_2O_3) desired in the finished glass product . . . ." (*Id*. at 12:61-64.) In the case of flint glass, no input is needed. (*Id*. at 13:3-4.)

transmission characteristics of the final glass product to be designated ***before melting*** (not measured after the glass product is made as taught by Mosch) and for the amounts of colorants and decolorants added to the glass batch to be adjusted in real time (i.e., not based on process feedback after melting) . . . ." (Lehman Patent, Prosecution History, Supplemental Amendment at 13-14 [Jt. App'x Tab 6 at A0129-30] (Sep. 7, 1999) (emphasis in original); *see id*. at 18 [A0134] ("the claimed method allows one to specify before melting (not measure after the glass product is produced as taught in Mosch) the properties of the resultant batch mixture…the determination of the 550nm and 650 nm transmissions, both in magnitude and ratio, . . . ").) Plaintiffs' construction is, therefore, improper.

5. "calculating using said percentages and said percentage composition the desired glass coloring oxide agent levels and key glass color indicator parameters of glass of said particular color with said specified transmission properties" (hereinafter, "Step 6") (Claims 1, 26, 28, and 30)

Ardagh's Proposed Construction	**Plaintiffs' Proposed Construction**
"calculating **(not based on process feedback after melting),** using said percentages and said percentage composition, the desired glass coloring oxide agent levels and **the desired** key glass color indicator parameters of glass of said particular color with said specified transmission properties"	No construction needed; in the alternative: "using the percentages identified in previous steps to calculate the glass coloring oxide agent levels and key glass color indicator parameters"

Ardagh's claim construction clarifies the meaning of "calculating" based upon the prosecution history; it also addresses two grammatical issues which make the claim less ambiguous and easier to understand. Ardagh's construction includes the informative parenthetical "(not based on process feedback after melting)" which is how Lehman specifically described the process during prosecution. (*Id*. at 13-14 [A0129-30] ("the process of the invention allows the color and transmission characteristics of the final glass product to be

designated ***before melting*** (not measured after the glass product is made as taught my Mosch) and for the amounts of colorants and decolorants added to the glass batch to be adjusted in real time (i.e., **not based on process feedback after melting**)…" (emphasis in original and added).) Thus, Step 5 must be performed without the benefit of post-melt feedback.

Ardagh's construction further clarifies that "calculating" means performing a mathematical, formulaic, and quantitative calculation, not iterative "trial and error" techniques or employing empirical knowledge which Lehman expressly disclaimed. During prosecution, Lehman strenuously argued that his claims set forth "distinctions between the empirical method disclosed by Mosch and the automated formulaic technique" claimed by Lehman. (Lehman Patent, Prosecution History, Response to Office Action at 5 [Jt. App'x Tab 9 at A0205] (June 23, 1999).) Lehman further distinguished his claims because Mosch "provides no methodology for systematic use and is limited to the discovered mixtures and others which may be determined through trial and error." (Lehman Patent, Prosecution History, Supplemental Amendment at 18 [Jt. App'x Tab 6 at A0134]; Response to Office Action at 7 [A0207] ("Mosch does not disclose a technique for the *quantitative* use of colorizer and decolorizers to produce a desired output transmission characteristics.") (emphasis in original).)

Grammatically, Ardagh's claim construction clarifies the phrase "using said percentage and said percentage composition" between commas. This phrase was added by amendment, and the commas make it clear that the "percentages" and "percentage composition" are both used in the calculation and are not being calculated, as is clear when reviewing it in the Supplemental Amendment. (Lehman Patent, Prosecution History, Supplemental Amendment at 3 [A0119]; Preliminary Amendment to Continuing Prosecution Application at 2 [Jt. App'x Tab 10 at A0212] (May 3, 2000).) Ardagh's claim construction also clarifies that the modifier "desired" modifies

both "coloring oxide agent levels" and "key glass color indicator parameters."

Plaintiffs' proposed construction is misleading because, by not providing a construction, it ignores and attempts to vitiate the prosecution history, and the alternative construction omits express limitations in the claim which improperly broadens the claim scope.

6. **"calculating a composition of said recycled finished glass, said composition including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust final glass coloring oxide agent levels to said desired glass coloring oxide agent levels for glass of said particular color with said specified transmission properties";**

   "calculating a composition of said recycled finished glass including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust final glass coloring oxide agent levels to said desired glass coloring oxide agent levels for [amber/green] glass with said specified transmission properties so as to adjust color contribution of said [green/amber] glass" (hereinafter, "Step 7") (Claims 1 (and 26), 28 and 30)

Ardagh's Proposed Construction	**Plaintiffs' Proposed Construction**
"calculating **(not based on process feedback after melting)** a composition of said recycled finished glass, said composition including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust**, in real-time,** final glass coloring oxide agent levels to said desired glass coloring oxide agent levels for glass of said particular color with said specified transmission properties,"	No construction needed; in the alternative: "calculating the amount of each ingredient, expressed as a percentage of the amount of the total batch"

Ardagh's proposal makes important clarifications noted by Lehman during prosecution. As discussed above, Lehman stressed during prosecution that his calculations were not based on post-melt feedback, and that the calculations allowed for adjustment of glass coloring oxide agent levels in real time. (*Id*. at 13-14 [Jt. App'x Tab 6 at A0129-30].) As such, Ardagh's claim construction takes this into account.

Plaintiffs' alternative construction is improper because it removes important limitations in the claims and thus broadens the claim. In the words of the claim, the calculation yields "a composition of said recycled finished glass, said composition including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust final glass coloring oxide agent levels to said desired glass coloring oxide agent levels for glass of said particular color with said specified transmission properties." *See* Lehman Patent (Jt. App'x Tab 2) at Claims 1 (and 26), 28 and 30) (reciting Step 7). Thus, the "ingredients" to which Plaintiffs refer in their construction include "said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents"; these are the items found in the left-most column of the spreadsheet Lehman Figs. 12(a) and 12(b) depicted and discussed above.[6] The "amounts" of these ingredients are necessary to achieve the desired finished glass product, namely a glass having the "desired glass coloring oxide agent levels for glass of said particular color with said specified transmission properties." Plaintiffs' proposed construction impermissibly ignores these important concepts and creates unnecessary ambiguity.

IV. CONCLUSION

Ardagh respectfully requests that the Court adopt its proposed constructions for the reasons stated herein.

Dated: February 11, 2015

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[6] The spreadsheets in Figs. 2(a), 2(b), 2(c), 12(a), 12(b), 12(c), 15(a), 15(b), 15(c) contain similar listings.

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CERTIFICATE OF SERVICE

I, James H. S. Levine, hereby certify that on February 11, 2015, I electronically filed the foregoing DEFENDANT'S OPENING CLAIM CONSTRUCTION BRIEF with the Clerk of Court using CM/ECF which will send notification of such filing to all counsel of record who are registered with the CM/ECF system.

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